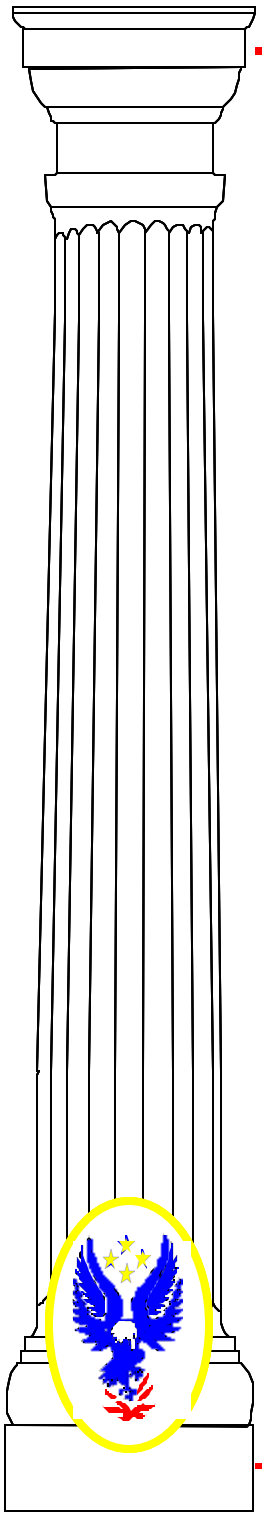

NATIONAL FIRE ACADEMY

Fire & Emergency Services Higher Education Conference

June 1-3, 2000

FINAL REPORT

UNITED STATES FIRE ADMINISTRATION

Federal Emergency Management Agency
U.S. Fire Administration/National Fire Academy
Fire and Emergency Services Higher Education Conference
June 1-3, 2000

TABLE OF CONTENTS

WELCOMING REMARKS

Ed Kaplan, Education Specialist, National Fire Academy (NFA), welcomed the group and provided opening remarks.

"On behalf of FEMA Director James Lee Witt and U.S. Fire Administration Chief Operating Officer Ken Burris, welcome to the second Fire and Emergency Services Higher Education Conference. My name is Ed Kaplan, manager of higher education programs at the National Fire Academy.

"The first outcome we seek is to provide a stimulus for collaboration between the academic fire programs and national and State fire service leaders.

"More specifically, we asked leaders from major fire service organizations to participate in a panel discussion about where they see higher education for the fire and emergency services going in the future and how the academic fire programs can help. Think of this as a national focus group opportunity for fire science coordinators as you hear from these leaders what their constituencies may need from your programs.

"We also asked directors of State fire service training to participate in a panel discussion about promoting partnerships between those who deliver training and those who deliver higher education to the fire service. They will share with you their various partnership models they developed with the 2- and 4-year schools and what steps they took to achieve them. We'll probe issues of competition between the two entities and the leadership role State fire training can play in fostering collaboration among and between the academic fire programs.

"Frankly, the Academy alone cannot make this collaboration happen. For our leadership to be effective, the leaders of our major constituencies, all of you in this room, must build the momentum for change at the national, State and local levels. In short, we need **lots** of leaders at all levels, not just here in Emmitsburg.

"The second outcome for the conference is to provide valuable information you can use to improve the quality of your educational programs. We have some excellent presentations planned for you in the areas of distance learning, on-line resources available from the government, and program evaluation.

"The final outcome we hope for is the development of a national model fire science curriculum, an elusive goal in our world if there ever was one.

"Achieving these outcomes here and then distributing a conference report afterwards just doesn't cut it when you need active leadership now. To help sustain the momentum spawning from this conference and to best communicate the issues to those who could not attend, we are videotaping the first day's events to broadcast later on EENET, FEMA's satellite television network.

"We will also make videotapes of today's proceedings available for purchase. For those who were unable to attend this conference, this is a way to learn what went on here. Likewise, the national and State leaders on today's panels can also provide the tapes to their members or executive boards to enlist their support for this effort.

"I want to close my remarks with what I see is the most important outcome of all for this conference. For all the grand alliances and strategic partnerships we hope to build at this conference… For all the knowledge we could possibly impart to you through presentations… And, for all the work we put into the development of a model fire science curriculum, in the end it's about one thing: the needs of your students…the men and women who enroll into your degree programs, training programs, and certification programs. The ones whose knowledge, skills, and abilities the American public counts on to effectively respond to every emergency large and small, from chimney fires to natural disasters.

"As you know, no two emergencies are alike. Today's fire departments face challenges, problems, and realities unthinkable 30 years ago. The increasing magnitude and complexity of fire conflagrations, natural disasters, hazardous materials, counter-terrorism, and legal liabilities require skills that training alone can no longer provide.

"Training teaches you how to do things, but not always what to do in every situation or circumstance. Higher education, though, provides you with the critical thinking and problem-solving skills necessary to make the sound decisions and correct choices for those situations not learned in training or on the job.

"I want to read to you a quote from an editorial that appeared in the Washington Post by Michele Myers, President of Sarah Lawrence College. She said that:

'"More than ever, we need to teach our students to learn how to learn, to sort and evaluate information, to make judgments about evidence and sources. They must learn how to separate the important from the trivial and, most important, they must learn to think analytically and creatively, to have ideas, to write and speak intelligently about ideas, and to know how to go from ideas to actions. It is not enough for our students to know; rather, they should know what to know and have the capacity to imagine.'

"With that said, I ask that we try to keep our eye on the ball and as we debate, as we discuss, as we inform, and as we network throughout this conference, please, let us remember that it's not about us. It really isn't. It's about the student."

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KEYNOTE SPEAKER

National Fire Academy (NFA) Deputy Superintendent Kirby Kiefer introduced the keynote speaker, NFA Superintendent Dr. Denis Onieal.

Dr. Onieal began by asking, "How many of you can answer a high school student's question, 'How do I become a doctor, an engineer, a lawyer?' How many of you can answer the question, 'How do I become a fire chief?'"

He went on to share that he became a firefighter in 1971 and started studying fire science in 1972. Since that time, there has always been a lot of talk about "professionalizing" the fire service. In a lot of ways, the fire service has. There have been tremendous improvements in equipment, communications, strategies, and tactics. There has been steady progress in understanding and appreciating the governmental and political environments in which the fire service lives. And there have been exponential increases in the kinds and types of services we provide.

There are hundreds of examples, but education and training are the sole reasons for why these "changes for the better" occurred.

Dr. Onieal introduced the largest challenge. It won't require money; as a matter of fact, money would complicate things and build impediments. The idea will reduce, and may eliminate, the need to spend money on student recruitment. It may also reduce the amount of time spent on recruitment as well.

It does require two things: an understanding of where we all need to go next, and a way we can get there.

The fire service needs a model curriculum.

The fire service does not have a nationally recognized and reciprocal system to acquire professional knowledge.

Dr. Onieal posed the following rhetorical questions:

> "What if, just for a few minutes, you pictured yourself as a participant in the writing of the Declaration of Independence (Jefferson and Hancock), or the Yalta Conference (Roosevelt, Churchill, Stalin), the Irish Peace Talks (Ahearn, Adams, McGovern), or the Middle East Accords (Carter, Rabin, Arafat)? How do you think those people felt the day they started? Do you think, when they started, that they realized what the outcome would be? That they were starting something bigger than all of themselves put together? What if, just for this weekend, you imagined yourself as the group that started something big, something bigger than all of us in this room put together? What if this weekend, you all got your brains and good looks together and we started this walk together?"

This group needs to start right now, this morning, on the fire service's next adventure: developing a model curriculum. We need to develop a model system of cooperation between higher education and State fire training systems that would formalize what already exists in some places. For example, college credit award for training taken, training certification for education taken, and it must operate at the local and State level where colleges and State training systems will retain all control.

This is our opportunity for the year. What we do this weekend will formulate the very first steps in the walk to change the fire and emergency services from an occupation to a true profession. By your presence here, you are at the beginning.

Dr. Onieal closed by asking attendees to take this walk with them. If this happens, there's no stopping us. He stated, "If we complete this task, we'll be able to answer the question, 'How do I become a fire chief?'"

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U.S. FIRE ADMINISTRATOR'S REMARKS

U.S. Fire Administrator Carrye B. Brown welcomed the group and offered her support to FESHE. She outlined what the Federal government's role is in this process. This includes support for this FESHE conference and developing courses that are nationally recognized and reciprocal.

Her travels around the Nation have given her the opportunity to be a fire safety advocate. She has found that the fire and rescue community cannot protect the Nation alone--we need to educate the public to be more safety conscious and address the needs of high-risk populations.

She highlighted the importance of prevention and mitigation in any fire and emergency services training. Also, fire and emergency service departments need to be connected to the community they serve.

Mrs. Brown shared that the USFA is developing courses that address the needs of adult learners. She also announced that USFA has developed a grants program that recognizes the "best of the best" fire safety programs across the country.

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PANEL DISCUSSION
Higher Education for the Fire and Emergency Services: What Needs to be Done and How Can Academic Fire Programs Help?

Note: Videotapes of this panel will be available for sale. Please check http://www.usfa.fema.gov/nfa/tr_high.htm for release date.

Moderators

Ed Kaplan, National Fire Academy
Larry Collins, Eastern Kentucky University

Panel Members

Robert Cumberland, National Volunteer Fire Council
Steve Edwards, North American Fire Training Directors
Eileen Graham, Women in the Fire Service
Peter Hodge, *Fire Engineering*, Fire Department Instructors Conference (Pennwell Publishing)
Ron Kanterman, NFA Alumni Association
Donald Oliver, Society of Executive Fire Officers

The panel began by sharing various experiences and insights regarding higher education for the fire and emergency services. Topics included changes in this area over the past 30 years, highlighting education requirements, experience, changes in managerial and supervisory approaches, and unique challenges. The panel addressed the fact that, today, the bar has been raised in these areas. This higher level of learning will better serve fire and emergency service managers as their interface with local and State governments continues to grow.

As an example of the changing fire service, a panel member shared his experience working with several generations within a fire department, highlighting the changing culture of the fire service as it relates to generational changes.

Another area affecting higher education is the increased outreach to young people in high schools, providing early momentum for them to enroll in Bachelor and Masters Degree programs.

Some areas that have not changed over the past 30 years include the basic fundamentals (i.e., response issues). These basics need to remain a key focus as we move forward in the fire service. We can increase our tools to best meet these basic needs.

A question posed to the panel concerned higher education as a certification requirement. In response, panel members shared that right now this may not happen, simply because many individuals requiring these standards (i.e., fire chiefs) do not have degrees themselves. However, as time progresses and education increases across the board,

bachelor's and master's degrees will be required for chief officer positions. The panel also discussed the need to develop recruiting and promotional programs to address individuals with college education who enter the fire service (i.e., issues regarding single-point entry).

The educational system faces unique challenges to meet the wide range of needs for volunteer and career fire service personnel. Key competency areas needed for both include higher math, writing, negotiation, and critical thinking skills. Volunteers are uniquely challenged with juggling work, home, and their fire service involvement, in addition to pursuing higher education opportunities.

The panel acknowledged the critical need for a national certification system for fire and emergency service personnel. Currently, a firefighter-paramedic in one State who chooses to move to another State may be forced to re-certify and re-train because no current national recognition system exists for training and certification. In light of the changing economic environment and the increased higher levels of education of fire and emergency services personnel, this issue becomes even more critical.

We also need to acknowledge that just because an individual has a college degree does not necessarily mean he/she is interested in becoming a chief officer. That person may be perfectly happy as a firefighter. We need to focus on the fact that a higher education teaches a person how to learn and fosters life-long learning.

Distance education is a critical tool in providing higher education opportunities for the fire service. Key tools include satellite courses, the Internet, and NFA's Degrees at a Distance Program. Also, changes in fire science degree programs (i.e., prerequisites) and delivery modes (i.e., evening and weekend programs) further enable individuals to pursue a higher education while working. All of these areas are changing and growing rapidly and will play a key role in meeting the educational needs of fire and emergency services personnel.

The fire service leader of tomorrow needs leadership skills to deal with the many changing facets of the fire and emergency services, from technical skills to humanities to political savvy. These curricula areas need to be developed. The industry also needs to create the connection between education and employment opportunities in order to provide the catalyst for developing these programs and increasing interest in these curricula. A panel member pointed out that law enforcement training includes extensive psychology and sociology training, areas much needed in the fire service. Fire and emergency services personnel need to be able to reach out to and understand the communities they serve.

There is a need to develop model education curricula and programs. Future educational systems will need to address higher education (i.e., degrees), as well as specific job tracks. Other key needs include funding in the forms of scholarships and grants--making professional development as important as apparatus and equipment.

An attendee asked the question "what can we as a fire service do to reach children ages 4 to 18 to best prepare them (i.e., life skills, etc.) for entry into the fire service rather than wait until they are in high school or college?" Suggestions from panel members included fire training and education camps for young people, the Boy Scouts' Fire Explorers, children's villages, and informational fairs. Perhaps the best way is just by being the example, such as the department's presence in the community and through public education programs. In addition, many fire service personnel are active in their communities in non-fire service roles (i.e., athletic team coaches, volunteer organizations, etc.). Many of the critical educational needs must be met by local school systems, which is a larger issue.

The panel discussed higher education and how changes will affect the current and future fire service. One panel member suggested that we look at the fire and emergency services and determine what services they can provide, especially as it relates to the setting of standards (individual versus department, etc.).

An attendee encouraged the conference to take a more progressive approach to partnership with local educational systems (from elementary to college), to include access to training. Partner with local community colleges to make opportunities available. Ask local educational systems to fulfill their role as community development programs. The attendee asked, "Are you ready to partner?" A panel member responded that the fire service may not be ready for that, but the local community colleges have the means to meet our needs: education, research, and community service. The panel member acknowledged that the fire service needs to ask for more assistance from the local community colleges.

An attendee encouraged partnership with human resource departments and associations. He also suggested incorporating interns and research projects, as well as conducting a job task analysis for chief officer positions.

In closing, panel members remarked on things that colleges should continue doing, stop doing, and start doing.

PANEL DISCUSSION
Partnership Between Training and Higher Education: What Needs to be Done?

Note: Videotapes of this panel will be available for sale. Please check http://www.usfa.fema.gov/nfa/tr_high.htm for release date.

Moderators
Ed Kaplan, National Fire Academy
Terry Spoor, Utah Fire and Rescue Academy

Panel Members
Art Cota, California (also representing TRADE)
Steve Edwards, Maryland
Jeff Long, Idaho
Randall Novak, Oklahoma
Dr. Denis Onieal, National Fire Academy
Walter Robinson, New York

The panel consisted of State training directors. Each member gave a brief synopsis of his State training's relationship with local 2- and 4-year colleges.

The panel discussed a life-long learning plan that may incorporate courses and training that students already have. For example, establishing programs to assist students in meeting requirements for degrees using credits they already have without having to take additional courses they don't need. While the panel members acknowledged that sometimes the requirements just don't match up (i.e., certification versus college credits), they acknowledged that this is a critical need for the fire service. Further work is needed at all levels for a uniform approach and system to address this issue. Panel members also shared the need to augment their State training office's role in advising students regarding higher education and career development.

Discussion moved to viewing the fire and emergency services as a profession. In the past, professionals (i.e., doctors, lawyers, etc.) were trained through apprenticeship programs. Over time, these areas moved into professional training and education. The fire service is not the first profession to face the challenges of transitioning from an apprenticeship type of career into a nationally recognized professional establishment.

Prompted by an attendee's question, the panel discussed fire service training that only meets the minimum standards. If offered two courses of varying length that basically meet their needs, students will invariably choose the shorter of the two courses. It seems as though the fire service is competing with itself to offer short training courses that meet minimum needs and yet push for higher education. However, panel members agreed that

competition is not always a bad thing. It makes us continually improve what we do and how we do it.

A panel member also stated that we should keep in mind the purpose we are doing all of this. It is not just to meet certification needs or to get a degree. It is so the fire service can best meet the needs of our customers.

An attendee addressed the need to bridge the gap for students, by creating bridge programs between non-transferable fire science Associate Degree programs to upper level 4-year degree college programs. The supply is there (i.e., educational programs); what's needed is the demand.

The panel also discussed the need to transfer "terminal" associate degrees to the junior/senior academic education programs. Many colleges have mechanisms in place to handle this kind of issue. A key step may be in counseling students. Many colleges and educational institutions also take a holistic approach to a student's background, to include life experience, and apply that background to credit equivalency.

NFA's Training Resources and Data Exchange (TRADE) may be an excellent resource to help further fire service training and education initiatives. Local community colleges could become involved with TRADE by attending regional meetings.

When asked if the State training directors are best serving NFA's needs or if the system could be expanded to include 2- and 4-year colleges, Dr. Onieal shared that he continually seeks ways to unify the fire service. Lack of unity in the fires service has been our biggest downfall. To go outside existing systems and try to create new systems only hurts what we're trying to do. The fire service needs unity. What we are trying to do is marry the State higher education systems with the State fire training systems to accomplish our mutual goals.

Panel members further discussed reciprocity issues and terminal degree programs, as well as the development of national programs to better address the "big picture." Advising students can greatly help in this area. Discussion centered on the many options to address this issue.

The panel also discussed how to better define educational programs for the fire service. Programs can develop core curricula that will transfer from one level to the next, and establish reciprocal agreements among the schools and career field. Students would develop educational plans in conjunction with advising.

Discussion focused on a model curriculum and what path to follow. Dr. Onieal encouraged the group that it has the freedom to establish the programs and set the standards of higher education for the fire and emergency services. Supply and demand will play a part in the need for higher education. This change is occurring in the fire service today.

Panel members cited NFA's Executive Fire Officer Program (EFOP) classes and their possible role in meeting the higher education needs of the fire and emergency services.

In closing, the panel members shared what the fire service training programs should continue to do, stop doing, or start doing. Answers included funding, encouragement, building upon existing systems, and working with local colleges and TRADE. A panel member suggested that the model curriculum include basic core courses, established in terms of topics or general areas. Again, academic and career advising was reiterated as a key concern.

Ed Kaplan shared that America Burning Recommissioned called for a model fire service curriculum, and that the time is now.

PANEL DISCUSSION
Are We Ready for Distance Learning?

Moderator
Joanne Hildebrand, University of Maryland University College

Panel Members
Barbara Kaplan, University of Maryland University College
Thomas Sturtevant, Texas A&M
Tom Thompson, University of Maryland University College

There are several relevant areas: administrative support issues, program evaluation, student evaluation, technology, student retention issues, and student training to take distant education courses.

The panel discussed issues related to administrative costs, including hidden costs. Additionally, to have a good distance learning experience, colleges have to limit enrollment to allow for more interaction.

Distance learning works well with the human biology of learning. Having the student interact in the learning environment using distance learning technology fosters learning.

An attendee asked about the dropout rate for distance learning courses. In many cases, the dropout rate for distance learning courses is higher than for resident courses. This is seen mostly in passive distance learning environments. A more aggressive, interactive environment helps avoid this. Also, interactive learning environments would best meet the needs of the fire and emergency services personnel. Use of video in the interactive technology will greatly enhance the distance learning experience.

Another challenge posed by distance learning is the training of faculty and their approach to course development and instructional design. Teaching at a distance involves a change in perception. Teaching on line is uniquely different than in the classroom. It demands a matching of pedagogy and technology.

An attendee asked what needs to be addressed when using distance learning. Distance education is different--you cannot convert a classroom environment into a distance learning environment. You need to develop ways to best meet your objective. Distance learning involves more instructor preparation. An instructor who teaches in a distance learning environment may become a better classroom teacher.

The panel discussed quality control. One way a college can maintain quality control is to use the cluster method--having students meet on the first and last days, as well as in the middle of the course. However, this would not be feasible for universities that have students world-wide.

In some cases, students without definite deadlines have a hard time meeting class requirements. A way to address this issue is to establish key requirements (i.e., purchasing hard copy books for the course, specific deadlines, clear expectations, etc.). Students do need more structure, with some flexibility, in distance learning environments.

Distance learning also does not replace the physical classroom experience. Sometimes external factors dictate the tools that are used to develop distance education courses.

The panel addressed a question on how distance education fits into the volunteer and career fire service environment. Distance education can provide educational opportunities for personnel that will help them advance and improve their professional development. Distance education also provides for more significant networking opportunities.

Options in addition to courses may be modules or small information packets, "just enough information just in time" (JEIJIT). State agencies can use that technology to meet training needs.

FEMA's Web site hosts an online discussion on this topic.

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PRESENTATION
NIST Fire Research: A Resource for Distance Learning

Dr. Nelson Bryner, Department of Commerce,
National Institute of Standards and Technology

Mr. Bryner is a chemical engineer with the National Institute of Standards and Technology's (NIST) Building and Fire Research Lab that operates with a budget of about $30 million. He provided background information on the lab and its research capabilities. He also shared information on fire research and resources that may be valuable to the fire and emergency services as they look to develop distance learning programs.

He encouraged attendees to visit their Web site which has numerous links, models, publications, and other valuable resources. They have been using the models to recreate actual fires as part of their research.

NIST's fire program is divided into two divisions: fire science and fire safety and engineering.

FIREDOC is a search engine available on their Web site that allows you to search for publications and articles. The articles include publications by well-known magazines, as well as publications and reports of lesser known sources. (http://fire.nist.gov/fire/runfiredoc_a.html)

Last year they conducted 3,000 burn tests. Reports from these tests and other experiments are available. Mr. Bryner showed a short video highlighting several burn tests. The results of these tests are available to the fire service. NIST has also developed several fire models developed from actual fires. He elaborated on the Fire Dynamics Simulator.

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PRESENTATION
Emergency Management Institute Higher Education Project
Steve Sharro, Acting Superintendent, Emergency Management Institute

Mr. Sharro gave a PowerPoint presentation on FEMA's Emergency Management Institute's (EMI) Higher Education Project. One of the goals of EMI is to encourage and support the inclusion of emergency management-related education in colleges and universities across the Unites States. EMI believes that in the future more emergency managers should come to the job with college degrees in emergency management. EMI would like to see an emergency management-related degree program in every State by 2001.

EMI has undertaken several projects, which promote college-based emergency management education. EMI has been working with a variety of colleges and universities to develop a prototype bachelor degree curriculum consisting of classroom-based, upper division level courses. To date, there are 10 completed courses and 10 currently under development. A prototype curriculum for associate degrees in emergency management also has been developed based on existing EMI training courses.

When the project began in 1995, the University of North Texas, Thomas Edison State College, and the Rochester Institute of Technology were the only schools offering degrees in emergency management. Today there are currently 23 Certificate Programs, 12 Associate Degree programs, 11 Bachelor Degree programs, 15 Master Degree programs, and 5 Doctoral programs across the United States. In addition, there are 20 colleges and universities investigating or proposing the development of an emergency management program.

EMI has also developed an Associate Degree Emergency Management Program prototype curriculum based on existing EMI training courses. EMI has developed a CD-ROM of course materials to serve as samples and prototypes for 4-year schools.

To download prototype courses or to view information on college programs and how to contact each school, visit EMI's Higher Education Project Web site at www.fema.gov/emi/edu/higher.htm.

EMI has an independent study program with courses designed for both the general public and allied professionals. Courses consist of lessons, practice exercises, and a final exam. Courses are paper-based and will also become available on the Internet. Certificates are provided upon successful completion and academic credits are available.

He entertained questions from the audience and made available FEMA/EMI's Prototype Associate's Degree Courses on CD-ROM, as well as handouts of his presentation.

During the question and answer period EMI staff shared their experiences with articulation between 2-year (especially terminal) and 4-year degrees in emergency management. Another topic discussed was how many of the emergency management

degree programs develop from social sciences whereas many of the fire degree programs develop from engineering.

PRESENTATION
International Fire Service Accreditation Congress
Dr. Terry Heyns, Lake Superior State University

The International Fire Service Accreditation Congress (IFSAC) is a peer-driven, self-governing system that accredits both fire service certification programs and higher education fire-related degree programs. IFSAC is a nonprofit project authorized by the Board of Regents of Oklahoma State University (OSU) as a part of the fire service programs mission of the College of Engineering, Architecture, and Technology. The IFSAC Administrative Offices are located on the OSU campus in Stillwater, Oklahoma.

IFSAC's mission is to plan and administer a high quality, uniformly delivered accreditation system with an international scope. This is accomplished by carrying out established policies and procedures through the most efficient use of resources available. The membership of the IFSAC is divided into two assemblies: Assembly of Fire Training Certificate Programs and Assembly of Fire Related Degree Programs.

An annual meeting of IFSAC and its Assemblies is held in a member's State, Province, or nation. Additionally, board meetings are held each fall. Dr. Heyns invited the attendees to join them at the IFSAC meetings and raise key issues.

Mr. Heyns shared that the process requires a lot of work effort and is costly (i.e., application fee, IFSAC teams transportation, lodging, and meal costs, etc.). However, the benefits of going through the assessment and accreditation are worthwhile. He provided examples of how the process benefited Lake Superior State University. Its program gained positive visibility on the campus. The IFSAC team also provided helpful insight into some areas where the program needed improvement. Additionally, the team visited with local government representatives which also improved the program's visibility. The program also gained some national and international visibility.

Mr. Heyns entertained questions from the group and made membership applications available. During the question and answer portion, the attendees touched on several topics, including the role of accrediting degree programs in "professionalizing" the fire service and the fact that IFSAC is an international organization.

PRESENTATION
Academic Fire Programs Survey Findings
Thomas Sturtevant, Texas A&M

Mr. Sturtevant shared the purposes for the survey as well as the findings. So far, he has experienced a 25-percent return rate.

Major sections that he gathered information on include areas such as degree program information, student information, coordinator/director and faculty information, and perceptions.

He provided highlights of his findings to date. Of the associate degree programs, forty-two percent of the respondents are using distance education. Sixty-seven percent supported a model fire science degree program. Twenty-seven percent responded that they use NFA's handoff courses, including Building Construction, Introduction to Inspection, and Safety and Survival. They also use some EMI courses.

Of the respondents, only 31 percent replied that they are active in FESHE. Mr. Sturtevant's findings were that, of the 69 percent who were not active, the respondents didn't know about it, it was held at a bad time of year, or they could not afford it. He also suggested that the survey may not be getting to the coordinators or appropriate person.

The results will be posted on the NFA's Web site and will be available in a variety of formats. He hopes to complete the survey, with a return rate of 35 percent, over the next couple weeks. Mr. Sturtevant shared anecdotal examples about the process of developing the survey and lessons learned. NFA is exploring ways to continue conducting this survey on a regular basis.

He encouraged attendees to review their Web pages to make sure that they are user friendly and include their complete contact information (i.e., phone number with area code, email, mailing addresses, etc.).

The survey can be found at http://wtonline.wtamu.edu/eval/fma

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PRESENTATION
NFA's New Leadership Development Program
Dr. Burt Clark, National Fire Academy

Dr. Clark provided an overview of NFA's proposed Leadership Development Program (LDP) (formerly the Management Science Program). On May 8 to 12, NFA convened a meeting of subject matter experts and development specialists to review its Management Science Program and develop a 10-year plan.

The group suggested the name be changed to Leadership Development Program. They also recommended that the curriculum be expanded to eight resident courses, with a variety of Direct Delivery, 2-day handoff, self-study, and computer-based training options.

Students who complete the eight-course program and a research practicum would receive a Fire Service Leadership Certificate.

Dr. Clark also reported that the group recommended establishing a certificate program for tracks within the LDP: Communication, Leadership, and Administration. When a student completes each track, he/she would receive a certificate.

The group also provided suggested development timeline and other recommendations. One such recommendation is to hold an LDP conference, similar to the EFOP. In addition, students who complete LDP would be eligible for entry into the EFOP.

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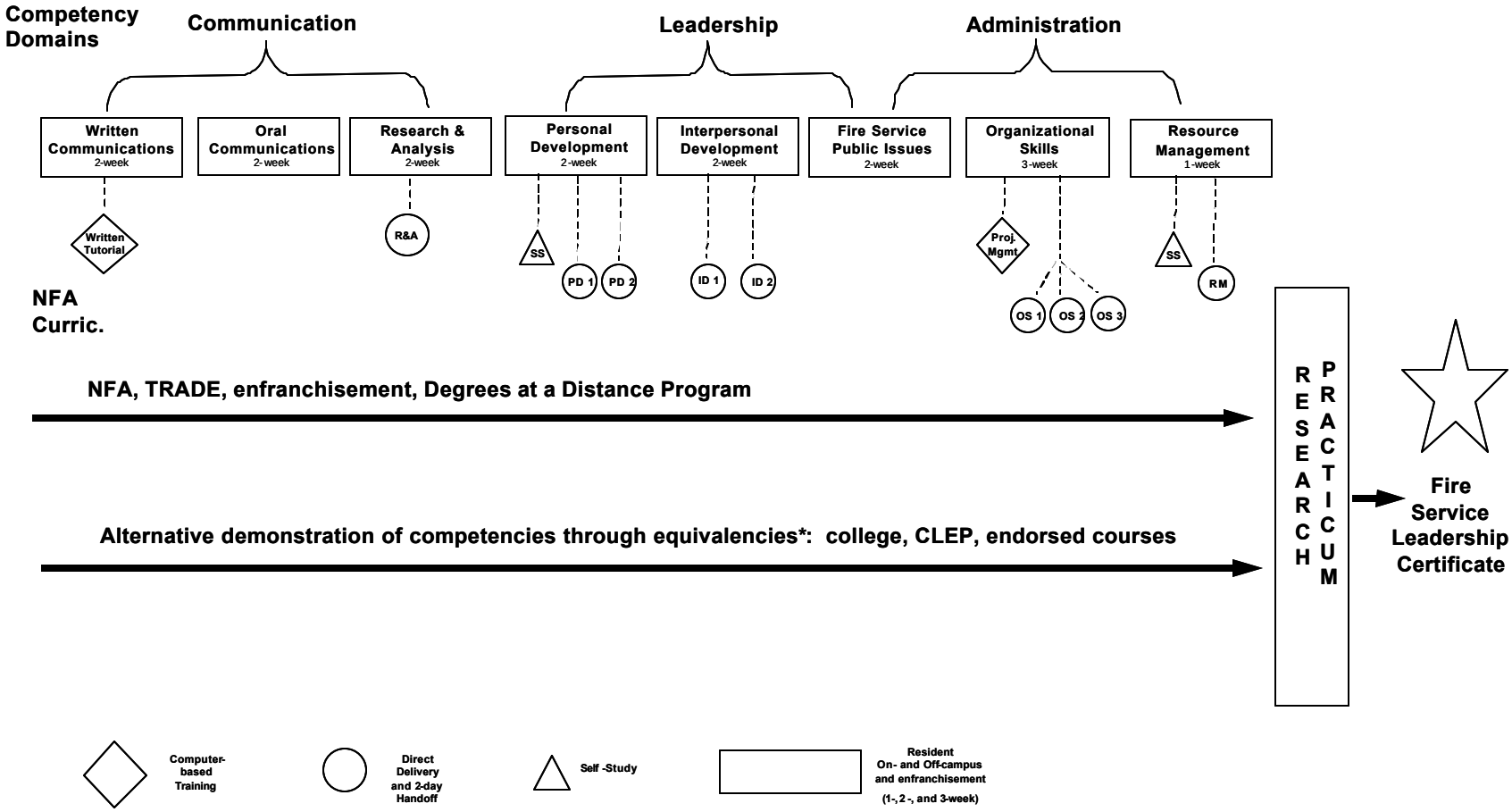
LEADERSHIP DEVELOPMENT PROGRAM
Competencies, Curriculum, and Certification Model



DRAFT

*** Certified by State academies, metro fire departments, colleges.**

PRESENTATION
FESHE Steering Committee
Terry Spoor and James Matlock

Steering Committee representatives reported on its meeting. Proposed action items were

1. Establish an email list-server.

2. Moderate continuing discussions of "model curriculum" on the FEMA/USFA Higher Education Forum Web site.

3. Maintain the present informal organization.

4. Conduct the 2001 Conference in conjunction with the EMI Higher Ed Conference.

5. Distribute a complete report of this year's conference to all institutions.

6. Establish a planning process for the 2001 conference.

PRESENTATION
Sample Model Curriculum Requirements
James Matlock

James Matlock presented his ideas for a sample model curriculum.

Associate Degree Entry Level/Firefighter

General Education	22 SCH
Fire Training Academy	24 SCH
Approved Electives	20 SCH
EMT-B	
Haz mat	
Arson	
Inspector	
Aircraft	
Driver Operator	
Total:	66 SCH

Associate Degree Company Grade Officer

General Education	30 SCH
Fire Officer II	32 SCH
Total:	62 SCH

Baccalaureate Degree Chief Grade Officer

Associate Degree	62-66 SCH
and	
Baccalaureate Work	30 SCH
Fire Officer III & IV	32 SCH
Total:	124-128 SCH

Mr. Matlock shared that this may be a good way to make the transition between 2- and 4-year programs and across States and may lead to employment. This sample model would make use of existing training programs at the college level, transferring training from fire training academies. Many colleges have limitations and concerns because fire instructors may not meet the college's certification requirements, etc. They also have restrictions because they are a certifying agency.

Much discussion on this topic followed. Some attendees felt that as a conference on higher education, we should address a level above rookie school. While we may want to

give people credit for what they have, we need to hold people to a higher standard. For example, Florida could not participate in a curriculum like this.

There was also discussion on the difference between higher education (degree) and technical training. The economics of the subject was also addressed as technical training is very expensive. Mr. Matlock shared that he has a program like this in place at his school and it is making money.

Some attendees voiced the need to go back to the basic premise of education and training. There was a suggestion to establish five to six core academic courses. The technical training could be counted as elective options.

An attendee expressed concern with this model by saying that if the entire Associates Degree program is based entirely on technical training, you will wind up with a terminal degree. Students need to get some higher learning, higher thinking, etc. This kind of model is already in place for the average firefighter. Need to get beyond this to make firefighting a profession.

Mr. Matlock agreed that we have to have high academic standards. However, most campuses have two levels of education--academic and technical.

An attendee shared that the one thing we are overlooking is that we have a different paradigm than in the past. Degrees used to be very specialized (upward pyramid, i.e., teaching). Fire operates now in the opposite pyramid (specialized at the bottom and more general at the top). We need to change our thought, our whole way of doing things.

Another attendee cautioned that group that in moving towards a model, don't limit our freedom in being able to evaluate best ways to meet the needs of our students.

There was further concern over use of the word "model." There needs to be a healthy arms length distance between the Federal government/national organization and the education institutions. We can only recommend. We need to fine tune the nomenclature. The change needs to happen at the education system's level. This is a 10-year effort and won't happen overnight.

The group agreed to move on to the work of establishing a suggested core curriculum.

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PRESENTATION
Program Evaluation: Getting Meaningful Feedback on Your Degree Program's Effectiveness

Janet Perry, Research and Evaluation Specialist,
Fox Valley Technical College

Ms. Perry spoke to the group about evaluating programs. Fox Valley Technical College (FVTC) is a 2-year technical college with 5,000 full-time employees and 50,000 students. They offer 60 associate degree and technical diploma programs. FVTC operates under a $55 million budget.

An evaluation is an "identification of relevant standards of merit, worth, or value and an investigation of performance of these standards." (Scriven, 1991)

The initiation of FVTC's instructional program evaluation process began in 1982. All programs are evaluated every 5 to 7 years. They evaluate 10 to 12 programs a year. The intended outcomes are to be proactive, cost effective, time efficient, relevant for future employees, and involve various stakeholders.

Ms. Perry provided an overview of the process. You must determine the programs for evaluation. At FVTC, they found that it worked better to do this on a rotating system with advance notice and approval from the deans. Then you must meet with the staff. This is a critical process since not all staff may be aware of the process. Other steps in the process include collecting materials, conducting the onsite evaluation, and implementing recommendations.

Preliminary materials and information that are collected include:

- Identifying team members. This is a critical component. At FVTC, the faculty identifies the team members. The team may be made up of professionals, other educators, graduates, vendors, or professional organization representatives.
- Employer survey, to include future job duties, hiring potential, and confirmation of program outcomes.
- Current student survey. This is a course evaluation designed to look at the program as a whole, not to look at a specific course or faculty. The survey may ask the number of semesters completed, level of satisfaction, and program strengths and weaknesses.
- Self-evaluation plan, asking about recent activities, curriculum, equipment, computers, facilities, professional growth, and marketing.
- Faculty profiles, including position, education, certification, professional growth, and planned future professional growth.

Ms. Perry shared that the onsite evaluation includes an overview to establish a process and structure and patterns of evidence. They also provide a tour of the area. Then the team reviews the curriculum and may interview faculty, students, and management.

Then the team conducts a "recommendation brainstorming process." Each of the team members individually identifies recommendations, then the group divides into two teams to identify recommendations. Finally, the whole group reaches consensus through a rating system which helps set priorities.

Evaluation Reports are prepared, to include a preliminary report (i.e., advisory committee minutes, the mission statement of the college, etc.), recommendation follow-up form, and final report.

It is important to "implement results, initiate follow-up activities, and make any improvements." (Kellis, 1995, p. 34). Ms. Perry stressed the importance of implementing and documenting results. FVTC does this by using the recommendation follow-up form, which is broken down into 2 parts. Part I includes the recommendation, response, and timeline. Part II includes the recommendation, resources, contacts, and final response. All recommendation followup forms are reviewed by the dean to make sure appropriate implementation is being taken.

It is critical to have management's buy-in and participation in the entire evaluation process. They also conduct an evaluation of the evaluation process, to include a faculty survey, evaluation team member survey, faculty focus groups, and staff and management interviews.

Ms. Perry provided an example of how the evaluation process helped FVTC's Fire Protection Associate Degree Program. As a direct result of the recommendations being implemented, the fire program has built a joint fire station/training station, built a confined space training center, built a fire training building, added a staff member, and expanded curriculum over Internet and ITV.

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PRESENTATION
Distance Education: A Plan for the Future of Teaching and Learning

Ray Shackelford, California State University, Los Angeles

Mr. Shackleford addressed the group on distance education in the California State University (CSU) system. He provided an overview of the Cornerstones Report, a systemwide planning framework that articulates the values, priorities, and expectations for an even stronger and more successful future. CSU launched this comprehensive systemwide initiative to evaluate strategies and make specific plans to meet the challenges of the next decade.

He gave examples for the real need to explore the possibilities of distance education. These include supporting the needs of a larger student body and delivering learning opportunities to a wider and wider faction of the populace. In addition, more students are working and are unable to attend during traditional hours.

Distance learning can include multiple methods of course delivery, such as cable TV, CD-ROM, email communication, video conferencing, and Web-based training on the Internet. Distance learning extends the hours of availability to meet the time constraint needs of more students, provides a "research proven" effective means of delivering education, and encourages technology competency in students, making them better candidates in the job market.

Mr. Shackleford cited several Web resources, such as:

- http://www.sport.ussa.edu/distance/dlresour.htm--resources for distance learning on the Internet
- http://www.uwex.edu/disted/home.html--distance education clearinghouse
- http://www.digitalthink.com/training/sites.html--DigitalThink

The U.S. Department of Education and Library of Congress also are good sources of information. Several universities with distance learning programs include the California Virtual University and the University of Phoenix. A database of academic institutions offering online learning can be found at:
http://www.centra.come/DISTANCE/deiacad.html.

Developing and planning your distance education course can be challenging. Rather than reinvent the wheel visit a model developed by the University of Maryland University College at: http://www.umuc.edu/ide/modlmenu.html#common.

There are unique opportunities for assessment of distance learning, such as online quizzes, self tests, and competency based learning. Support for the online course delivery includes student support, faculty support, developer support, and technology support.

For more information on CSU's distance learning programs, visit
http://www.calstatela.edu/centers/cetl/fitsc/ or email teachme@calstatela.edu.

rshacke@calstate.la.edu

Higher Education Web Site

Ed Kaplan

Ed Kaplan presented information on NFA's Web site which includes a higher education discussion forum. Links to other valuable sites are also available, including firedawg.com, a useful site listing fire science degree programs.

He encouraged the group to begin discussion on the model curriculum using the forum. The site can also be used to establish chat rooms on the topic and forum capabilities for classes.

Higher education page: http://www.usfa.fema.gov/nfa/tr_high.htm

Higher education forum: http://www.fema.gov:8080/~usfa

ed.kaplan@fema.gov

PLENARY REPORT
Developing a Model Fire Science Degree Curriculum

The conference attendees worked in small groups to determine a model core curriculum and definition. The following is a plenary report on the consensus of the group.

The four original working groups identified similar areas for the core curriculum:

ADMINISTRATION	TECHNOLOGY	PRESERVICE	FIRE SCIENCE
Hydraulics	Hydraulics	Hydraulics and Pumps	Hydraulics
Fire Prevention	Fire Prevention	Fundamentals Of Fire Prevention	Fire Prevention Strategies
Building Construction	Building Construction	Building Construction	Building Construction
Fire Protection Systems	Fire Protection Systems	Fire Protection Systems	Protection and Detection Systems
Introduction to Fire Science	Introduction to Fire Science	Orientation/Concepts of the Fire Service	Introduction to Fire
Fire Chemistry	Fire Behavior/ Dynamics	Fire Behavior/ Dynamics	Fire Behavior, Chemistry

The working groups then defined the core areas:

FIRE PREVENTION

This course is designed to provide an historical perspective of the origins of fire prevention practices and life safety considerations

Presentation of relevant codes will cover contemporary fire safety, fire prevention, and life safety initiatives that reduce a community's risk associated with fire.

Emphasis will be on the responsibility for code enforcement, fire investigation, fire safety education, and assemblage of relevant data.

BUILDING CONSTRUCTION GROUP

- Loads/Load application;
- Structural components/systems;
- Basic/General types of construction;
- Construction materials/terminology;
- Fire resistance/Flame spread;

- Smoke movement/management;
- Electrical and mechanical systems; and
- Construction/Structural hazards.

Sample course description:

This course provides a concentrated study of structural loads and systems, construction materials, recognized construction types, electrical and mechanical systems, as well as their resistance to fire. This course also explores the hazards associated with fire spread, smoke production, and collapse.

FIRE PROTECTION HYDRAULICS

A study of water as an extinguishing agent. The mechanical properties of water at rest and in motion, water supply and distribution, calculating fire flow requirements, and pump theory.

INTRODUCTION TO FIRE PROTECTION SYSTEMS

A study of manual and automatic detection and signaling systems; fixed and portable fire suppression systems. Including: hazard analysis, hardware, basic calculations, system specifications, code compliance, and acceptance.

INTRODUCTION TO FIRE SCIENCE

This course provides an overview of fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization and function of public and private fire protection services; fire department as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics.
Lecture: 3 Hours

FIRE BEHAVIOR AND COMBUSTION

This course explains the theories and fundamentals of how and why fires start, spread, and are controlled; provides an indepth study of fire chemistry and physics; and examines fire characteristics of materials, extinguishing agents, and fire control techniques.
Lecture: 3 Hours

SUGGESTIONS FOR FESHE 2001

- Degree Programs presentations followed by panel discussions. Would like to have more depth in presentations.
- Create TRADE-ing Post concept.
- Content presentations.
- Solicit papers for conference/steering committee to choose.
- Examples of student newsletters, Web sites, etc.
- Nominate and recognize outstanding student projects.
- Problems with graduation and retention and improve student success (awaiting name).
- Evaluation of textbooks. Bring publishers for exhibiting their products.
- Follow-up to core curriculum. Work on baccalaureate.
- Continue to invite State Training Directors.
- Advocate joint effort with State Training Directors and college/university representatives.
- Have a State directors' meeting; overlap with FESHE.
- Address the issue of bridging gap between training and education in an academic setting, including the need to maintain oversight and responsibility.
  - Suggested presentation: example of a successful program/process that bridges this gap.
- Consider impact of *Daubert* decision. Reach out to arson investigation community; how to apply science to cause determination.
- Suggest reviewing the processes used by other professions that moved from a technical to academic standard (i.e., nursing); suggest inviting representatives to share their experiences (speaker, presentation, etc.).
- Fire accreditation process.
- Suggestion to move location of FESHE meeting (off campus):
  - FDIC, college campuses.
  - Benefits of holding on NFA campus.
- Discussion on FESHE Conference dates.
- Invite observers from other organizations (i.e., IAFC's Professional Development Committee).
  - Invite key representatives of national organizations to attend a reception.
  - Use of media; buy-in from fire service.
- Use CFSI Dinner.
  - Have FEMA Director/U.S. Fire Administrator mention FESHE.

APPENDICES

CORE MODEL

ADMINISTRATION	TECHNOLOGY	PRESERVICE	FIRE SCIENCE
Hydraulics	Hydraulics	Hydraulics and Pumps	Hydraulics
Fire Prevention	Fire Prevention	Fundamentals Of Fire Prevention	Fire Prevention Strategies
Building Construction	Building Construction	Building Construction	Building Construction
Fire Protection Systems	Fire Protection Systems	Fire Protection Systems	Protection and Detection Systems
Introduction to Fire Science	Introduction To Fire Science	Orientation/Concepts of the Fire Service	Introduction to Fire
Fire Chemistry	Fire Behavior/Dynamics	Fire Behavior/Dynamics	Fire Behavior, Chemistry

Additional background information on Core Model

ADMINISTRATION	TECHNOLOGY	PRESERVICE	FIRE SCIENCE
Tactics and Strategies	Strategy and Tactics	Tactics and Strategy	---
Equipment and Apparatus	Apparatus/Equipment	---	---
---	Management	Fire Administration/ Mgmt.	---
Fire Codes	---	Codes and Enforcement	---
Intro. to Company Officer	Leadership/Supervision	---	---
I.C.S.	Incident Management	---	---
Health and Safety	Firefighter Safety	---	---
Instructional Methodology	Instructor	---	---
Fire Hazard and Control	Industrial Fire Protection	---	---
	Investigation Emerg. Med. Tech. Information Management Legal Aspects Hazardous Materials Customer Service Public Relations Antiterrorism Preplanning/Comp. Design Fire/Life Safety Education	**ELECTIVES** Apparatus Driver Operator Instructor *HazMat 40 Hr. (FRO)* Fire Investigation Hazard Planning/Contingency FF Safety Specifications--Apparatus, Stations, PPE Blueprints Internship/Work Experience Special Topics/Seminars, i.e., Technical Rescue, Wildlands, NFA **GENERAL EDUCATION** English 1 & 2 Speech Lab Science College Algebra Political Science Physical Education Ethics **K-12** 2+2 (Tech Prep/Explorer) College Bound H.S. Students 2-yr. Degree Preservice Academy	**CERTIFICATIONS** FF Med Haz Mat GE Skills/Training/Electives